



## Case Report

### Death by attack from a domestic buffalo

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#### ABSTRACT

Attacks on humans by domestic animals causing fatal injuries are not uncommon in rural areas of India. But injuries due to buffalo gore are rarely observed in villages and are different from other casualties like stab injuries, road fatalities, etc. As the victims of buffalo attack are usually recovered from the fields or forest, the investigating officer could be misled as to the nature of infliction of fatal injuries to a possible homicide. The injuries caused by the horns of buffaloes are of various shapes, sizes and directions. They are violent and goring in nature. The wound sustained may be contusions, lacerations, criss-cross wounds, penetration of body cavities, and sometimes fractures. In the absence of any eye witness, it becomes very difficult to believe the unsuspecting domestic water buffalo as attacker. This case is reported for its rarity, for the awareness of the possible injuries in such unnatural deaths, and factors predisposing to a buffalo attack.

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## 1. Introduction

The Indian buffalo (*Bubalus bubalis*), also called water buffalo and Carabao, is a large bovine animal, frequently used as livestock in Asia, and also widely in South America, Southern Europe, North Africa and elsewhere. It is known as "Water Buffalo" because it is adapted to and enjoys being in water. Asia is the native home of the water buffalo, with 95% of the world population of water buffalo, with about half of the total in India. Many Asian countries depend on the water buffalo as its primary bovine species. It is valuable for its meat and milk as well as the labour it performs. The domesticated water buffalo is often referred to as "The living tractor of the East" as it is mainly relied upon for ploughing and transportation in many parts of Asia. It is an integral part of continent's traditional village farming structure. Probably the most adaptable and versatile of all work animals, it is widely used to plough; level land; plant crops; puddle rice fields; cultivate field crops; pump water; haul carts; sleds; and shallow-draft boats; carry people; thresh grain; press sugar cane; haul logs; and much more. Water buffaloes even found a mention in Hindu lore, as the god of death "Yama", rides on a water buffalo.

Water buffalo is a massively built, ox like animal; it is a dull black with a sparse coat and large horns that are triangular in cross section. It stands 1.5 m (5 ft.) or more at the shoulder stretch, up to

2.9 m (9.5 ft.) in body length and weighs from 300 to 800 kg. They carry enormous backward-curving, crescent-shaped horns stretching close to 1.5 m (5 ft.) long with deep ridges on their surface. The horns of the buffalo are more slender than those of the bull. Their behaviour sometimes differs from cattle. For example, most water buffaloes are not trained to be driven. Instead, the herdsman must walk alongside or ahead of them. They then instinctively follow. Usually buffaloes are timid and lazy animals and are not dangerous to people, provided they are left alone. When provoked, handlers and bystanders occasionally sustain injuries from these animals.<sup>1,2</sup>

## 2. Case report

A 46 year old male was attacked by a domestic water buffalo (Fig. 1) in a village at the foothills of Western Ghats of Karnataka State, India. The main source of livelihood of the villagers is through agriculture. The major cultivation is paddy though vegetables are grown on ad hoc basis. The domestic water buffaloes are used mainly for ploughing in the paddy fields. The incident occurred while he was leading them back to their shelter after the day's work in the paddy field. He was brought dead to the nearby tertiary health care centre. The body was preserved in cold chamber and the autopsy was conducted next day morning.

At autopsy, the body was that of a well built and moderately nourished male with a height of 1.7 m (5.57 ft.) and weight of 56 kg (123.5 lb). The T-shirt worn by the victim had a defect (tear), over its front on right side in its upper half measuring 5 × 4 cm.

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**Fig. 1.** Buffalo responsible for the incident, having bloodstains on the left horn.



**Fig. 2.** Penetrating lacerated wound on the right side of the chest.

An obliquely placed lacerated wound measuring  $8 \times 2$  cm (Fig. 2) was present over the front of the chest on right side, in the mid clavicular line corresponding to the 4th intercostal space. There was a reddish colored<sup>1</sup> abrasion measuring  $3 \times 0.5$  cm at the outer end of lacerated wound. The wound was situated 129 cm from the right heel. It had perforated the intercostal muscles corresponding to 4th intercostal space forming a cone like pouch between the chest muscles and the thoracic cage directing downwards towards left sternal margin corresponding to the 4th rib. The dimension of the laceration at the left sternal margin was  $3 \times 1.5$  cm. It had resulted in fracture of 4th–6th ribs at their costochondral junction on left side. The penetrating wound on the chest was corresponding

to the defect on the T-shirt worn by the victim. The laceration extended into the left thoracic cavity, piercing the parietal pleura ( $3 \times 1.5$  cm), perforating the pericardium ( $6 \times 1$  cm); perforating the anterior surface of the right ventricle ( $5 \times 0.5$  cm) (Fig. 3) and penetrating the interventricular septum ( $1 \times 0.5$  cm). There was 1800 ml of frank blood in the left pleural cavity without any clots. Internal organs were pale especially brain, oesophagus, stomach, liver and kidney.

There was a horizontally placed split laceration measuring  $1.5 \times 1$  cm  $\times$  muscle deep, over the under surface of the chin in the midline. An obliquely placed reddish abraded contusion measuring  $5.5 \times 1$  cm was present over the front of the left shoulder, 4 cm below the shoulder tip. Multiple linear reddish scratch abrasions were present over the back of the left forearm in its upper third, over an area of  $21 \times 8$  cm, of varying length ranging from 5 cm to 9 cm.

The cause of death opined to be haemorrhage resulting from the cardiac laceration caused by buffalo gore.

### 3. Discussion

Deaths due to attack by domestic Indian buffalo is very rare. But there have been many deaths due to "bull horn" injury and domestic "cow horn injuries".<sup>3–10</sup> There are even reports of serious injuries inflicted by camel and donkeys.<sup>11–13</sup> Sekhon et al., Wasadikar et al., and Saravana et al. reported that in the case of bull horn injury the abdomen and the perineal regions were commonly affected.<sup>7,8,14</sup> They opined that it is due to the anatomical configuration of the perineum and areas being at the level of the bull's horns while attacking. In the present case, the injuries by buffalo gore are present over the region above the level of abdomen. These areas are at a higher level than the areas of injuries sustained by bull horn, because of the height of the buffalo and the relative position of the deceased at the time of buffalo gore. In this case the direction of the penetrating lacerated wound is downwards, backwards and towards the left, resulting in extension of penetrating wound on chest on right side into thoracic cavity on left side. This may be attributed to the enormous backward-curving and crescent-shaped horns and repeated lateral swinging movement of the head seen in buffaloes.

Sekhon et al. and Wasadikar et al. reported that peritoneal violation with prolapse of viscera was present in significant proportion of bull injury cases. Lack of bony shield over the abdomen ensue deep penetrating injuries and prolapse of viscera.<sup>7,8</sup> The present case shows single fatal injury over chest on the right side.



**Fig. 3.** Laceration of the right ventricle of the heart.

<sup>1</sup> For interpretation of color in Fig. 2, the reader is referred to the web version of this article.

extending into the left thoracic cavity resulting in laceration of heart. It has formed a conical pouch like cavity having larger dimension at the entry of the wound and lesser dimension at the left sternal border. This can be related to the tapering (conical) shape of the buffalo horns, thereby aiding the causal connection between the injury and the object causing it. The bigger size of the laceration over the pericardium and anterior surface of right ventricle is because of the injury caused on the pumping heart. The multiple linear scratch abrasions on the back of the left forearm are attributable to the rough, large boxy hooves of the buffalo. The laceration over the chin could be due to the fall on ground or the buffalo itself might have inflicted the injury when the victim slumped to the ground. The penetrating injury over the chest and laceration over the chin were not clean cut. The edges of the injuries were rugged and no defence injuries were seen. There were blood stains over the striking horn (left) of the buffalo (Fig. 1). The pattern of injuries is not that which is typical of a homicidal attack, and the anatomical position of the injuries being at the level of the buffalo horns while attacking, indicates that there is causal connection between the injuries and history of buffalo attack.

We have shown from this case that even commonly presumed lazy buffaloes are also responsible for injury to handlers and bystanders, which usually attack their victims on provocation while grazing and ploughing in the field. These injuries may be reduced by proper handling of the cattle while grazing or in the field, coagulation of the horns after a buffalo calf's birth and disbudding and dehorning of the animals. Health education may help in achieving this.<sup>4,11,14</sup>

#### 4. Conclusion

There is significant risk of sustaining injury, often severe, from rearing of domestic animals like cows, bulls and buffaloes. A combination of education and proper humane handling of these domestic animals may decrease the incidence of these injuries.

#### Conflict of Interest

None declared.

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#### Ethical Approval

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